

**SYSTEM AND METHOD FOR AUTOMATED FRINGE
COUNTING USING IMAGE INFORMATION**

Abstract:

A bulge testing system (10) for testing the material properties of a thin film window (14) using a Michelson interferometer (18) that generates an interference pattern (32) having fringes (34) and nodes (36) that move as the thin film window is inflated or deflated. The bulge testing system includes a fringe counting module (82), an analysis module (114) and an output module (88). The fringe counting module allows a user to interactively select from an image of the interference pattern one or more sampling regions (30) in which the user interface will count fringes. The analysis module allows a user to interactively change the location of maxima/minima indicators (116) in the event that noise in the image causes the analysis module to incorrectly determine the locations of the fringes and nodes. The output module automatically calculates material properties and provides test results to an output file and/or a results window (168).

BTW/203574 2

BULGE TESTING SYSTEM